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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/800,538	03/15/2004	Akio Saiki	SUNSTAF-1033	1294
<div>7590 02/27/2007 KNOBLE YOSHIDA & DUNLEAVY LLC Eight Penn Center Suite 1350 1628 John F. Kennedy Blvd. Philadelphia, PA 19103</div>			<div>EXAMINER BERTHEAUD, PETER JOHN</div>	
			<div>ART UNIT 3746</div>	<div>PAPER NUMBER</div>
SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE		
3 MONTHS	02/27/2007	PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/800,538

Applicant(s)

SAIKI ET AL.

Examiner

Peter J. Bertheaud

Art Unit

3746

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 March 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|----------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>3/15/04</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 2 and 20 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In claim 2 the phrase "wherein a partition wall has a rear end portion that is located in the rearward of the front end of the communication part" is unclear due to its contradictory nature. In claims 2 and 20 the location of the communication part is unclear and should be better specified.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-4, 7-14, and 18-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Saiki 2004/0179948 in view of Parrott 4,846,631.

Saiki discloses a piston type compressor comprising: a housing having a front housing 13 and a rear housing 14 and forming a plurality of first cylinder bores 38A, a plurality of second cylinder bores 38B and a suction chamber 22; a rotary shaft 31

Art Unit: 3746

rotatably supported by the housing and having a rotational axis L, the rotary shaft having an inner chamber 45 along the rotational axis, the inner chamber communicating with the suction chamber 22 near a front end of the rear housing, wherein the first cylinder bores and the second cylinder bores are arranged around the rotational axis of the rotary shaft; a plurality of double-headed pistons 39 connected to the rotary shaft, each of the pistons being accommodated in the first cylinder bore 38A and the associated second cylinder bore 38B to respectively define a first compression chamber 40A and a second compression chamber 40B, each of the pistons reciprocating for compressing gas in the first compression chambers and the second compression chambers as the rotary shaft rotates; a first suction valve mechanism 49A rotatably provided on the rotary shaft 31 near a rear end of the front housing 13 for introducing the gas from the suction chamber 22 to the first compression chambers 40A, the first suction valve mechanism 49A including a first rotary valve 50A that has the first suction communication passage 48A for sequentially interconnecting the inner chamber 45 and the first compression chambers 40A in a suction process as the first suction valve mechanism 49A rotates synchronously with the rotary shaft 31; and a second suction valve mechanism 49B rotatably provided on the rotary shaft 31 near the front end of the rear housing 14 for introducing the gas from the suction chamber 22 to the second compression chambers 40B, the second valve mechanism 49B including a second rotary valve 50B that has the second suction communication passage 48B for sequentially interconnecting an outer circumference of the inner chamber 45 and the second compression chambers 40B in the suction process as the second suction valve

Art Unit: 3746

mechanism 49B rotates synchronously with the rotary shaft 31. Saiki further discloses a communication part, which is a border area located between the second communication passage 48B and an outer circumference of the inner chamber 45 the communication part having a front end (see front end of passage 48B) and a rear end. Saiki also discloses that the gas being compressed contains lubricating oil for lubricating an inside of the compressor (see para. 42), the housing further comprising a pair of cylinder blocks 11A, 11B that define a crank chamber 36 for accommodating a crank mechanism 35, 41 that converts the rotation of the rotary shaft into the reciprocating movement of the piston 39, a pair of thrust bearings 37A, 37B being located on an outer circumferential side of the rotary shaft 31 along the rotational axis L for restricting the rotary shaft to move along the rotational axis, a pair of lubricating holes 51A, 51B extending through the rotary shaft for supplying the lubricating oil in the inner chamber to the thrust bearings, the lubricating holes being respectively located at positions corresponding to the thrust bearings (see position of 51A, 51B in Fig. 1), at least one of the lubricating holes communicating with an outer circumference of the inner chamber 45. Saiki further discloses that the rotary shaft 31 has an inner surface for defining the inner chamber 45, a wall surface (see how the bore of the inner chamber narrows right at 51B creating a wall at the passage) being provided near at least one of the lubricating holes 51B in the inner chamber 45, and wherein the other of the lubricating holes communicates with the narrowed portion of the inner chamber 45. Saiki also discloses that a lubricating passage 52A is formed in the housing for interconnecting the narrowed portion of the inner chamber 45 and the crank chamber 36 and a separate lubricating

Art Unit: 3746

passage 52B for interconnecting an outer circumference of the inner chamber 45 and the crank chamber 36. However, Saiki does not teach the following claimed limitation taught by Parrott.

Parrott teaches a gearbox for a rotary, mineral cutting head comprising: a rotary shaft 9 with an inner chamber (see chamber enclosed by 42), a partition wall 43 located in the inner chamber along the rotational axis of the rotary shaft 9 for dividing the inner chamber into a first passage and a second passage (see 42 and 43 in Fig. 1), the first passage (inside 43) interconnecting a delivery port 41 with supply conduit 45, which is further connected to a pump, the second passage (inside 42) interconnecting a delivery port 41 with a separate supply conduit 46, which is further connected to a pump. Parrott further teaches that the partition wall 43 has a rear end portion, which protrudes from the inner chamber into a delivery chamber (see area that 41 opens into). Parrott also teaches that the partition wall 43 has a hollow cylindrical shape (see 43 in Fig. 1), an inside space of the of the partition wall forming the first passage, an outside space of the partition wall in the inner chamber forming the second passage (see configuration of 42 and 43 in Fig. 1 and col. 6, lines 15-29). Parrott further teaches that the cross section of the partition wall is circular (see col. 6, lines 15-24). Parrot also teaches that the inner chamber comprises a large-diameter chamber (see 42) and a small-diameter chamber (see 43).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the compressor of Saiki, by placing a partition wall within the inner chamber of the rotary shaft, its end portion located behind

Art Unit: 3746

the front end of the communication part, thereby making the compressor capable of distributing refrigerant gas, mixed with lubricant, in two separate passages to various holes within the inner chamber; this is done in order to facilitate an even distribution of a fluid to different areas of the apparatus (Parrott, col. 6, lines 24-29).

5. Claims 5 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Saiki 2004/0179948 in view of Parrott 4,846,631 and in further view of Fukanuma 6,558,133.

Saiki in view of Parrott discloses the invention as discussed above. However Saiki in view of Parrott does not teach the following claimed limitations taught by Fukanuma.

Fukanuma (Fig. 1) teaches a variable displacement compressor comprising a rotary shaft 16, an inner chamber 42 within the rotary shaft and a oil chamber 40 into which the inner chamber extends via end portion 39. Fukanuma further teaches that a cross-sectional area of the rear end portion is the largest in the inner chamber and that the rear end portion has a funnel shape (see 39 in Fig. 3).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the compressor of Saiki in view of Parrott, by altering the partition wall to be shaped like a funnel in order to facilitate movement of fluid into the inner chamber (Fukanuma, col. 8, lines 61-65).

6. Claims 15 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Saiki 2004/0179948 in view of Parrott 4,846,631.

Saiki in view of Parrott discloses the invention as discussed above as well as the first passage being longer than the second passage.

Saiki in view of Parrott discloses the claimed invention except for the cross-sectional area of the first passage is larger than that of the second passage. It would have been an obvious matter of design choice to make the cross section of the one of the passages, in order to get more flow through the passage, since such a modification would have involved a mere change in the size of a component. A change in size is generally recognized as being within the level of ordinary skill in the art. *In re Rose*, 105 USPQ 237 (CCPA 1955) (see MPEP 2144.04, IV. A – Changes in Size/Proportion).

7. Claims 17 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Saiki 2004/0179948.

Saiki discloses a piston type compressor comprising: a housing having a front housing 13 and a rear housing 14 and forming a plurality of first cylinder bores 38A, a plurality of second cylinder bores 38B and a suction chamber 22; a rotary shaft 31 rotatably supported by the housing and having a rotational axis L, the rotary shaft having an inner chamber 45 along the rotational axis, the inner chamber communicating with the suction chamber 22 near a front end of the rear housing, wherein the first cylinder bores and the second cylinder bores are arranged around the rotational axis of the rotary shaft; a plurality of double-headed pistons 39 connected to the rotary shaft, each of the pistons being accommodated in the first cylinder bore 38A and the associated second cylinder bore 38B to respectively define a first compression chamber 40A and a second compression chamber 40B, each of the pistons reciprocating for

Art Unit: 3746

compressing gas in the first compression chambers and the second compression chambers as the rotary shaft rotates; a first suction valve mechanism 49A rotatably provided on the rotary shaft 31 near a rear end of the front housing 13 for introducing the gas from the suction chamber 22 to the first compression chambers 40A, the first suction valve mechanism 49A including a first rotary valve 50A that has the first suction communication passage 48A for sequentially interconnecting the inner chamber 45 and the first compression chambers 40A in a suction process as the first suction valve mechanism 49A rotates synchronously with the rotary shaft 31; and a second suction valve mechanism 49B rotatably provided on the rotary shaft 31 near the front end of the rear housing 14 for introducing the gas from the suction chamber 22 to the second compression chambers 40B, the second valve mechanism 49B including a second rotary valve 50B that has the second suction communication passage 48B for sequentially interconnecting an outer circumference of the inner chamber 45 and the second compression chambers 40B in the suction process as the second suction valve mechanism 49B rotates synchronously with the rotary shaft 31.

Saiki discloses the claimed invention except for a partition wall having a planar shape. At the time the invention was made, it would have been an obvious matter of design choice to a person of ordinary skill in the art to place a partition wall down the center of the inner chamber in order to have two separate channels distributing fluid to the compressor because such a modification would amount to a mere duplication of parts. Applicant has not disclosed that the wall's arrangement or disposition provides an advantage, is used for a particular purpose, or solves a stated problem and it has been

Art Unit: 3746

held that mere duplication of the essential working parts of a device involves only routine skill in the art (*In re Harza*, 274 F.2d 669, 124 USPQ 378 (CCPA 1960)) (see MPEP 2144.04, VI. B. – Duplication Of Parts).

Conclusion

8. The prior art made of record, noted in the attached form 892, and not relied upon is considered pertinent to applicant's disclosure.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Peter J. Bertheaud whose telephone number is (571) 272-3476. The examiner can normally be reached on M-F 9am - 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ehud Gartenberg can be reached on (571) 272-4828. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

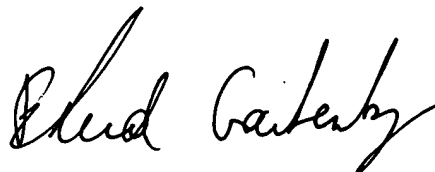
Art Unit: 3746

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PJB

2/20/07



**EHUD GARTENBERG
SUPERVISORY PATENT EXAMINER**